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Non Invasive Imaging

CAN THE 3D ECHOCARDIOGRAPHIC MITRAL VALVE GEOMETRY ANALYSIS PREDICT THE SURGICAL VALVULOPLASTY RESULT IN PATIENTS WITH MITRAL VALVE PROLAPSE?

Poster Contributions
Hall C
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Background: although accurate preoperative assessment of the mitral valve can estimate the likelihood of a successful repair, the impact of the 3D echocardiography in surgical result is not yet demonstrated.

Methods: the objective of this study was evaluate the association between parameters of mitral valve geometry assessed by the 3D intraoperative transesophageal echocardiography (3DIOTEE) and surgical results in patients with mitral valve prolapse submitted to valve repair. In 54 patients submitted to valvuloplasty (Double Teflon technique), the following parameters were analysed: anteroposterior diameter, commissural width, height, circumference and area of the mitral ring; anterior and posterior leaflets length, leaflets surface area, coaptation length, volume and height billow; length from anterolateral and posteromedial papillary muscle to coaptation; non-planar and aortic-mitral angles. The patients were divided in 2 groups according to the postoperative mitral regurgitation grade (group 1: absent or grade I mitral regurgitation; group 2: grade II or III). Univariate, multivariate and ROC curve analysis were performed to identify the association between the anatomical parameters and the surgical result ($p < 5\%$).

Results: presence of bicuspid billowing and the length from posteromedial papillary muscle to coaptation were higher in group 2 ($p = 0.041$ and 0.038, respectively). The multivariate analysis showed that they were associated with grade II or III postoperative mitral regurgitation ($p = 0.039$ and 0.015, respectively). Also, bicuspid billowing and the length from posteromedial papillary muscle to coaptation greater than 30 mm was related to 5.4 and 6.3 times more risk to develop postoperative mitral regurgitation grade II or III, respectively

Conclusions: the length from posteromedial papillary muscle to coaptation estimated by 3DIOTEE and the evidence of bicuspid billowing showed to be associated to grade II or III postoperative mitral regurgitation in patients submitted to valvuloplasty.